

FIG. 1A

A			
SMURF1	1	M S N V V T R R G G S S I R V R L T V L C A K N L A K R D	
hSMURF1	1	- - - - - G G S S I K I R L T V L C A K N L A K K D	
PUB1	1	M S N S A Q S R - - - - - R I R V I I V A I A D G L Y K R D	
SMURF1	61	K W N Q H Y D L Y V G K M D S I T I S I W N H K K I H K K	
hSMURF1	61	K W N Q H Y D L Y V G K T D S I T I S V W N H K K I H K K	
PUB1	55	Y W N E T F E V N V T D N S T I A I Q V F D Q K K F K K K	
SMURF1	121	L N P T D N D A V R G Q I V V S L Q T R D R I G T L G S V	
hSMURF1	121	L N P S D T D A V R G Q I V V S L Q T R D R I G T L G S V	
PUB1	114	K K S N E N T V V H G K I I I N L S I T A Q S T L Q V P S	
SMURF1	174	C F M D E P A P Y T D G P G A A G G G P G R L V E S P G	
hSMURF1	174	C F M E E P A R Y T D S T G A A A G G G N G R F V E S P S	
PUB1	174	S R A G S P T R D N A P A A S P A S S E P R T F S S F E P	
SMURF1	216	V R E H V Q T P Q	N R S H G F
hSMURF1	217	V R G S L Q T P Q	N R P H G H
PUB1	234	I R P N L S S V A G A A A A E L H S S A S S A N V T E G V	
SMURF1	239	Y E Q R T T V Q G Q V Y F L H T Q T G V S T W H D P R	
hSMURF1	240	Y E Q R T T V Q G Q V Y F L H T Q T G V S T W H D P R	
PUB1	294	W E Q R Y T P E G R P Y F V D H N T R T T T W V D P R R Q	
SMURF1	288	R T T V S G R I Y F V D H N N R T T Q F T D P R L H H I I	
hSMURF1	289	R S T V S G R I Y F V D H N N R T T Q F T D P R L H H I M	
PUB1	354	R L T N T A R V Y F V D H N T K T T T W D D P R L P S S L	
B			
			A

FIG. 1B

A	F F R L P D P F A K I V V D G S G Q C H S T D T V K N T L D P	60
	F F R L P D P F A K I V V D G S G Q C H S T D T V K N T L D P	60
	V F R F P D P F A V L T V D G E - Q T H T T T A I K K I L N P	54
	Q G A G F L G C V R L L S N A I S R L K D T G Y Q R L D L C K	120
	Q G A G F L G C V R L L S N A I S R L K D T G Y Q R L D L C K	120
	T G Q G F L G V I N L R V G D V L D L A I G C D E M L T R D L I I	111
	V D C R G L L D N E G A L L E D	173
	V D C R G L L E N E G T V Y E D	173
	S A A S G A R T Q R T S I T N D P Q S S K S G S V S R N P A S	173
	Q E Q R L Q A Q R V R G P E	215
	Q D Q R L Q A Q R L R N P D	216
	Q Y G R L P P G W E R R T D N L G R T Y Y V D H N T R S T T W	233
	Q Q P S S N A A R R T E A S V L T S N A T T A G S	238
	S Q D L P E G	238
	S P E L P E G	239
	T P R D L N S V N	287
	I P R D L N S V N	288
	Q Y I R S Y G G P N N A T I Q Q Q P V S Q L G P L P S G W E M	353
	N H Q S Q L K E P N H A I P V Q S D G S L E D G D E F P A Q R	347
	N H Q C Q L K E P S Q P L P L P S E G S L E D E E L P A Q R	347
	D Q N	388
C	C	
A	A	

FIG. 1C

B		D		B	
SMURF 1	348	Y E R D L V Q K L K V L R H E L S L	L Q P Q A G H C R V E		
hSMURF 1	348	Y E R D L V Q K L K V L R H E L S L	Q Q P Q A G H C R I E		
PUB 1	389	Y K R D F R R K L K Y F L S Q P A L H	P L P G Q C H I K		
SMURF 1	408	G E E G L D Y G G V A R E W L Y L L C H E M L N P Y Y G L			
hSMURF 1	408	G E E G L D Y G G V A R E W L Y L L C H E M L N P Y Y G L			
PUB 1	448	G E D G L D Y G G L S R E Y F F L L S H E M F N P F Y C L			
SMURF 1	468	R I M G L A V F H G H Y I N G G F T V P F Y K Q L L G K P			
hSMURF 1	468	R I M G L A V F H G H Y I N G G F T V P F Y K Q L L G K P			
PUB 1	508	R V I G L A I F H R R F V D A F E V V S F Y K M I L Q K K			
SMURF 1	528	T F C V E H N A F G R L L Q H E L K P N G K N L Q V T E E			
hSMURF 1	528	T F C V E H N A F G R I L Q H E L K P N G R N V P V T E E			
PUB 1	568	T F S V E D N C F G E V V T I D L K P N G R N I E V T E E			
SMURF 1	588	L I P Q H L L K P F F E Q K E L E L I I G G L D K I D I S D			
hSMURF 1	588	L I P Q H L L K P F D Q K E L E L I I G G L D K I D L N D			
PUB 1	627	L I P Q E L I N V F D E R E L E L I I G G I S E I D M E D			
SMURF 1	648	R A R L L Q F V T G S T R V P L Q G F K A L Q G S T G A A			
hSMURF 1	648	R A R L L Q F V T G S T R V P L Q G F K A L Q G S T G A A			
PUB 1	687	K S R L L Q F T T G T S R I P V N G F K D L Q G S D			
SMURF 1	708	Y E S Y E K L Y E K L L T A V E E T S G F A V E	731		
hSMURF 1	708	Y E S Y E K L Y E K L L T A V E E T C G F A V E	731		
PUB 1	743	Y T S K K D L D H K L S I A V E E T I G F G Q E	766		

FIG. 1D

D

C

V	S	R	E	E	I	F	E	S	Y	R	Q	I	M	K	M	R	P	K	D	L	K	K	R	L	M	V	K	F	R	407	
V	S	R	E	E	I	F	E	S	Y	R	Q	I	M	K	M	R	P	K	D	L	K	K	R	L	M	V	K	F	R	407	
V	R	R	N	H	I	F	E	D	S	Y	A	E	I	M	R	Q	S	A	T	D	L	K	K	R	L	M	I	K	F	D	447

F	Q	Y	S	T	D	N	I	Y	I	L	Q	I	N	P	D	S	S	I	N	P	D	H	L	S	Y	F	H	F	V	G	467
F	Q	Y	S	T	D	N	I	Y	I	L	Q	I	N	P	D	S	S	I	N	P	D	H	L	S	Y	F	H	F	V	G	467
F	E	X	S	S	V	D	N	Y	T	L	Q	I	N	P	H	S	G	I	N	P	E	H	L	N	Y	F	K	F	I	G	507

I	Q	L	S	D	L	E	S	V	D	P	E	L	H	K	S	L	V	W	I	L	E	N	D	I	T	S	V	L	D	H	527
I	Q	L	S	D	L	E	S	V	D	P	E	L	H	K	S	L	V	W	I	L	E	N	D	I	T	P	V	L	D	H	527
V	T	L	Q	D	M	E	S	M	D	A	E	Y	R	S	L	V	W	I	L	D	N	D	I	T	G	V	L	D	L	567	

N	K	K	E	Y	V	R	L	Y	V	N	W	R	F	M	R	G	I	E	A	Q	F	L	A	L	Q	K	G	F	N	E	587
N	K	K	E	Y	V	R	L	Y	V	N	W	R	F	M	R	G	I	E	A	Q	F	L	A	L	Q	K	G	F	N	E	587
N	K	R	E	Y	V	D	L	V	T	V	W	I	Q	K	R	I	E	E	Q	F	N	A	F	H	E	G	F	S	E	626	

W	K	A	N	T	R	L	K	H	C	L	A	N	S	N	I	V	Q	W	F	W	Q	A	V	E	S	F	D	E	R	647	
W	K	S	N	T	R	L	K	H	C	V	A	D	S	N	I	V	R	W	F	W	Q	A	V	E	T	F	D	E	R	647	
W	K	K	H	K	D	Y	R	S	Y	S	E	N	D	Q	I	I	K	W	F	W	E	L	M	D	E	W	S	N	E	K	686

G	P	R	L	F	T	I	H	L	I	D	A	N	T	D	N	L	P	K	A	H	T	C	F	N	R	I	D	I	P	P	707
G	P	R	L	F	T	I	H	L	I	D	A	N	T	D	N	L	P	K	A	H	T	C	F	N	R	I	D	I	P	P	707
G	P	R	K	F	T	I	E	K	A	G	E	P	N	K	L	P	K	A	H	T	C	F	N	R	L	Q	L	P	P	742	

D

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FIG. 2A

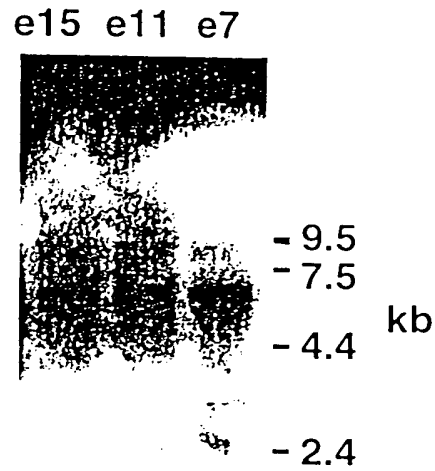
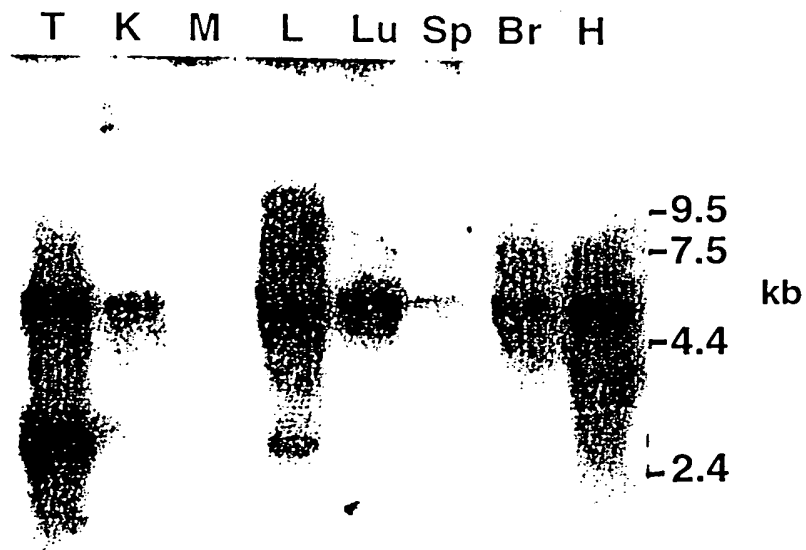



FIG. 2B

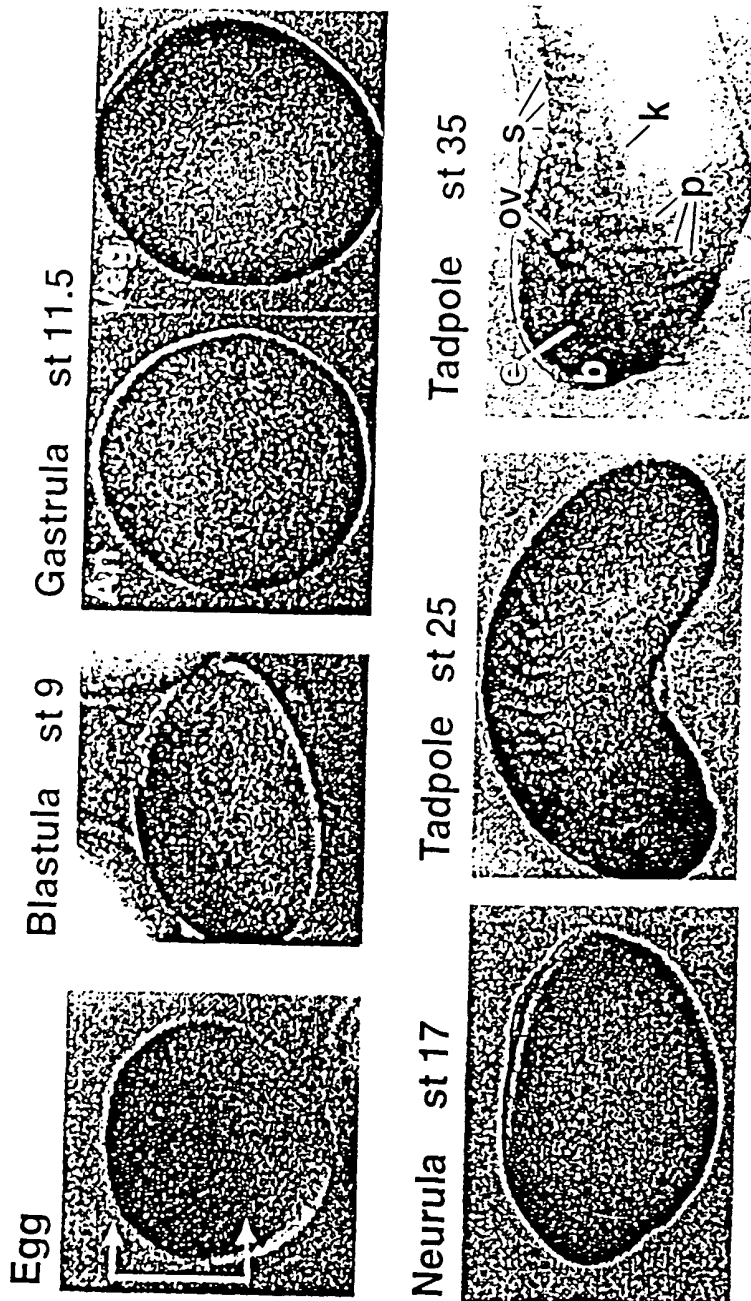


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egg 7 9 11 13 15 20 25 35 RT-
Smurf 1  **FIG. 3A**

ODC 

FIG. 3B



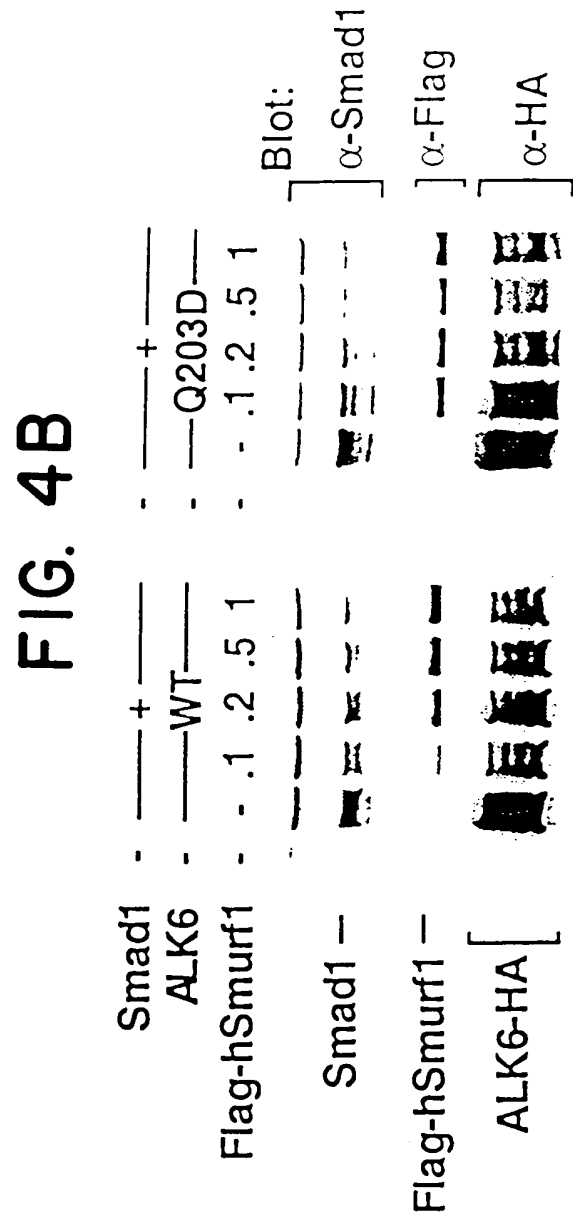


FIG. 4C

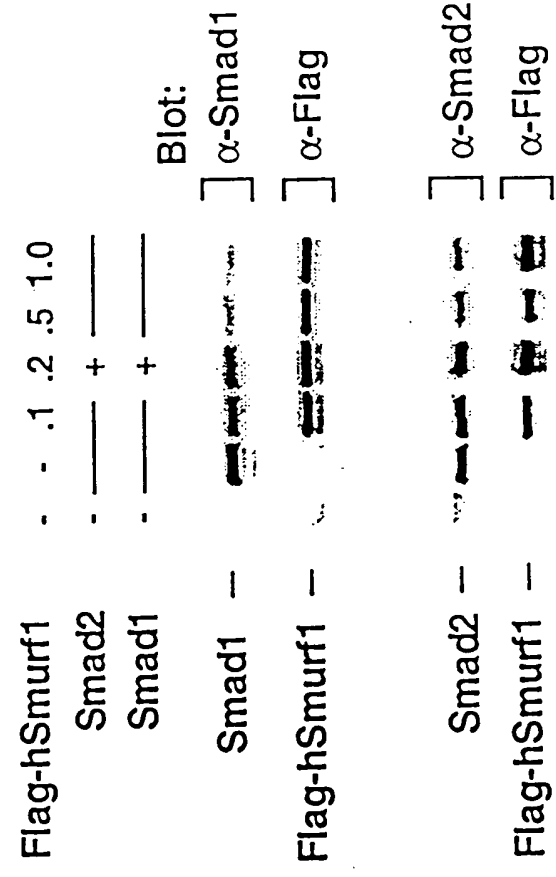
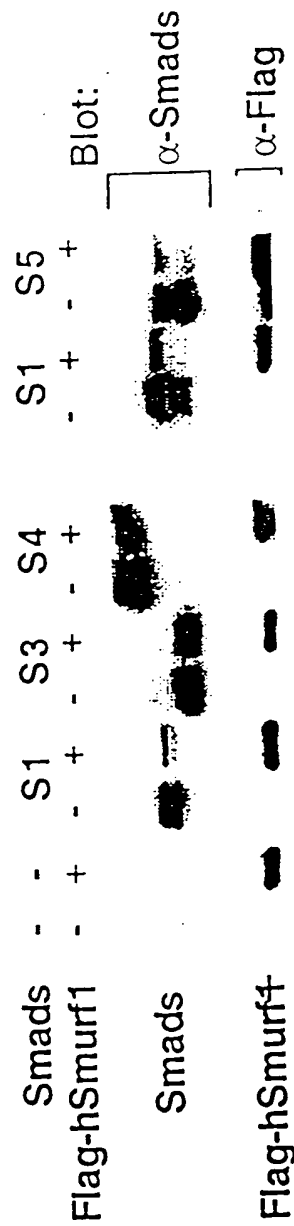


FIG. 4D



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FIG. 5A

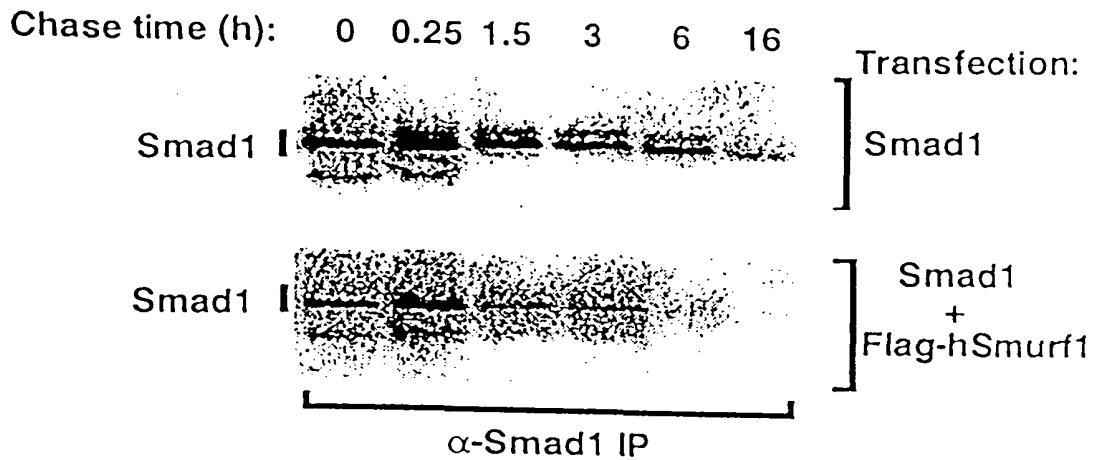
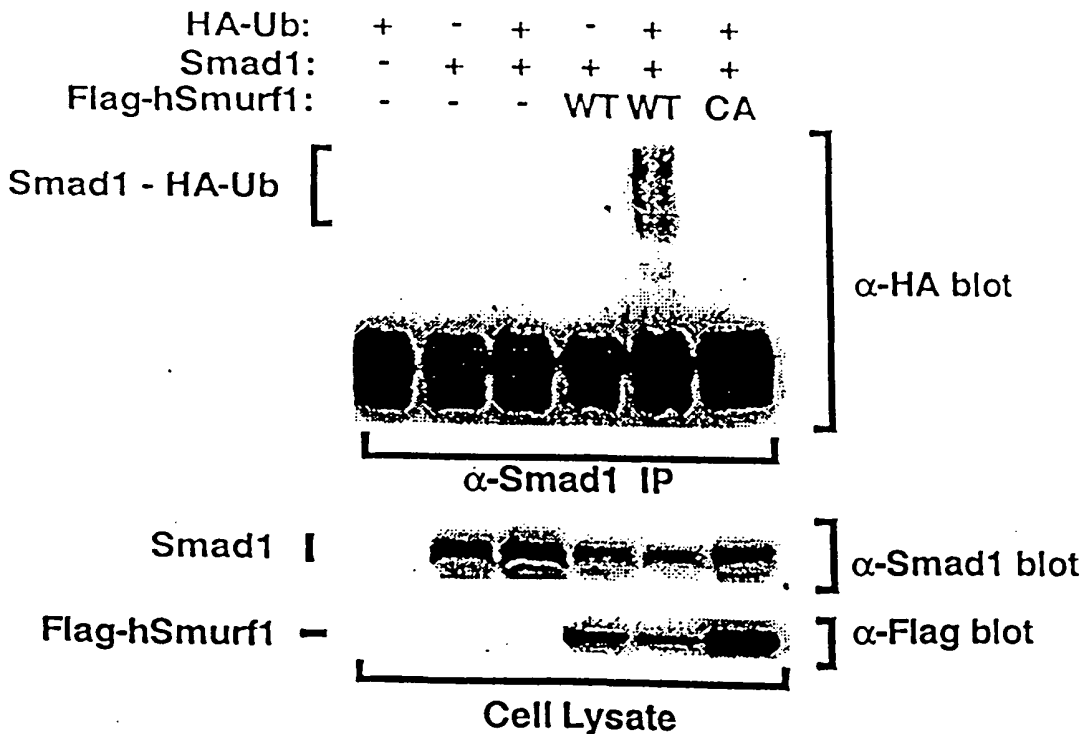


FIG. 5B



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FIG. 5C

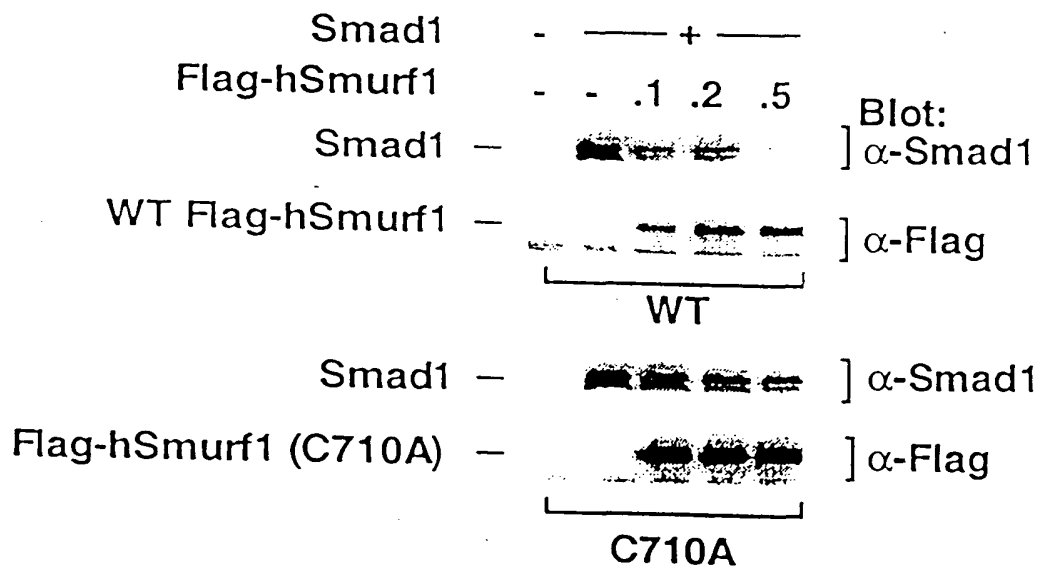
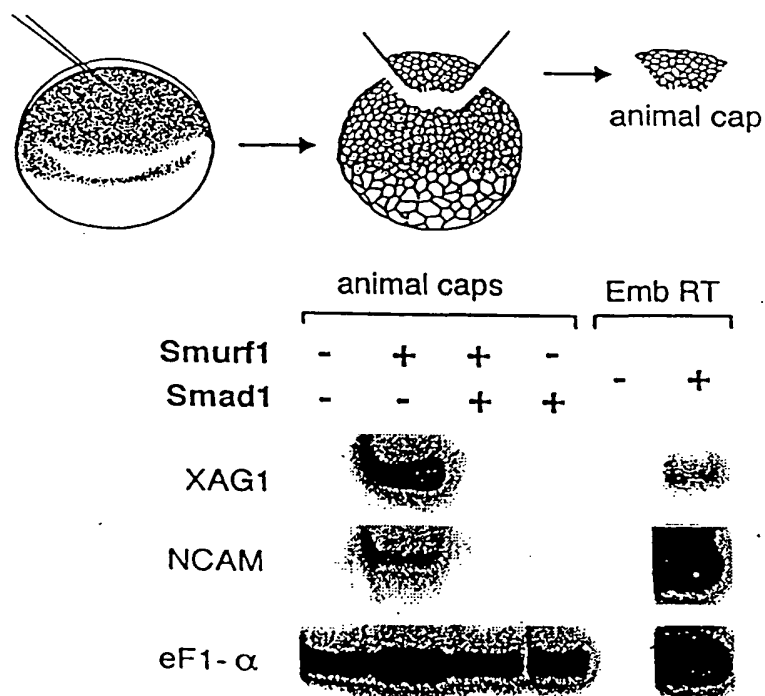
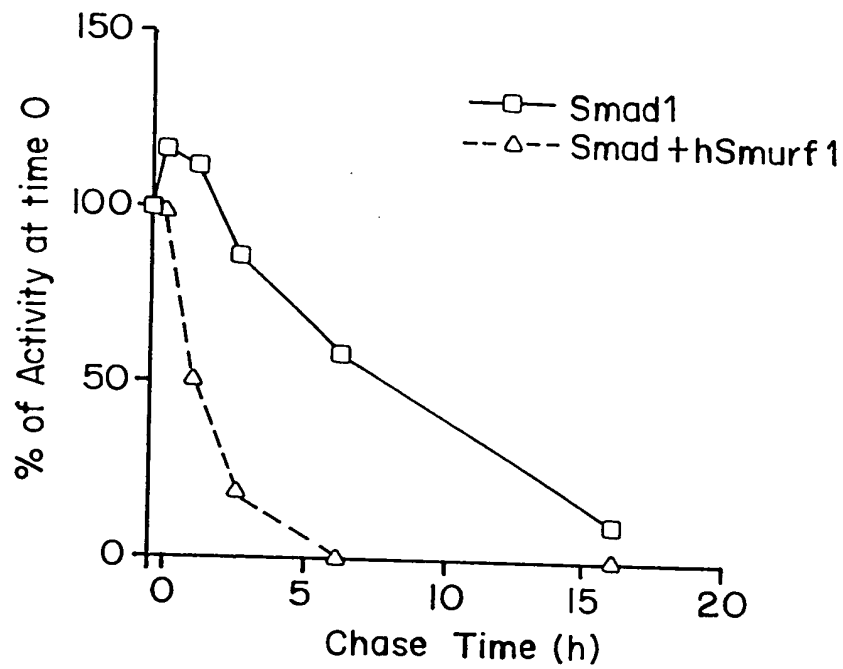


FIG. 7B



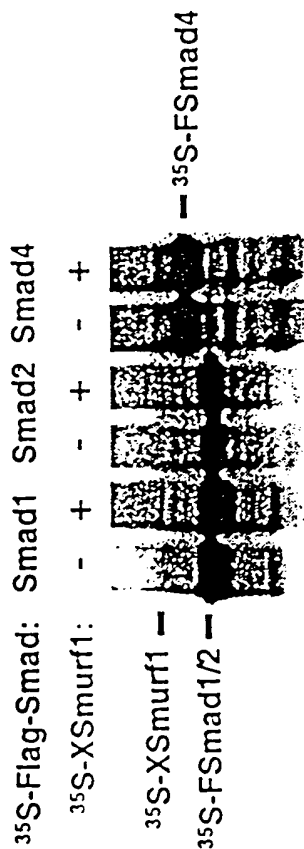
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FIG. 5d



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FIG. 6A



Smad1 Smad4 lamin pGBT9



FIG. 6B

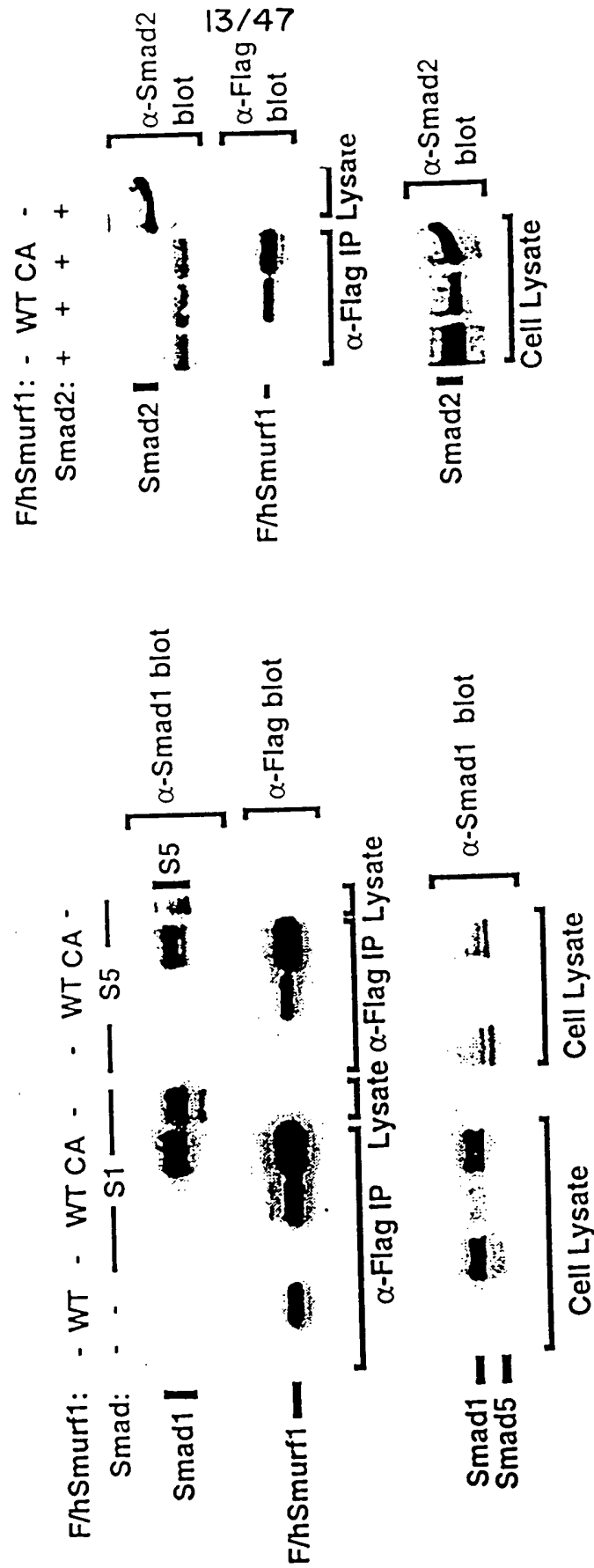
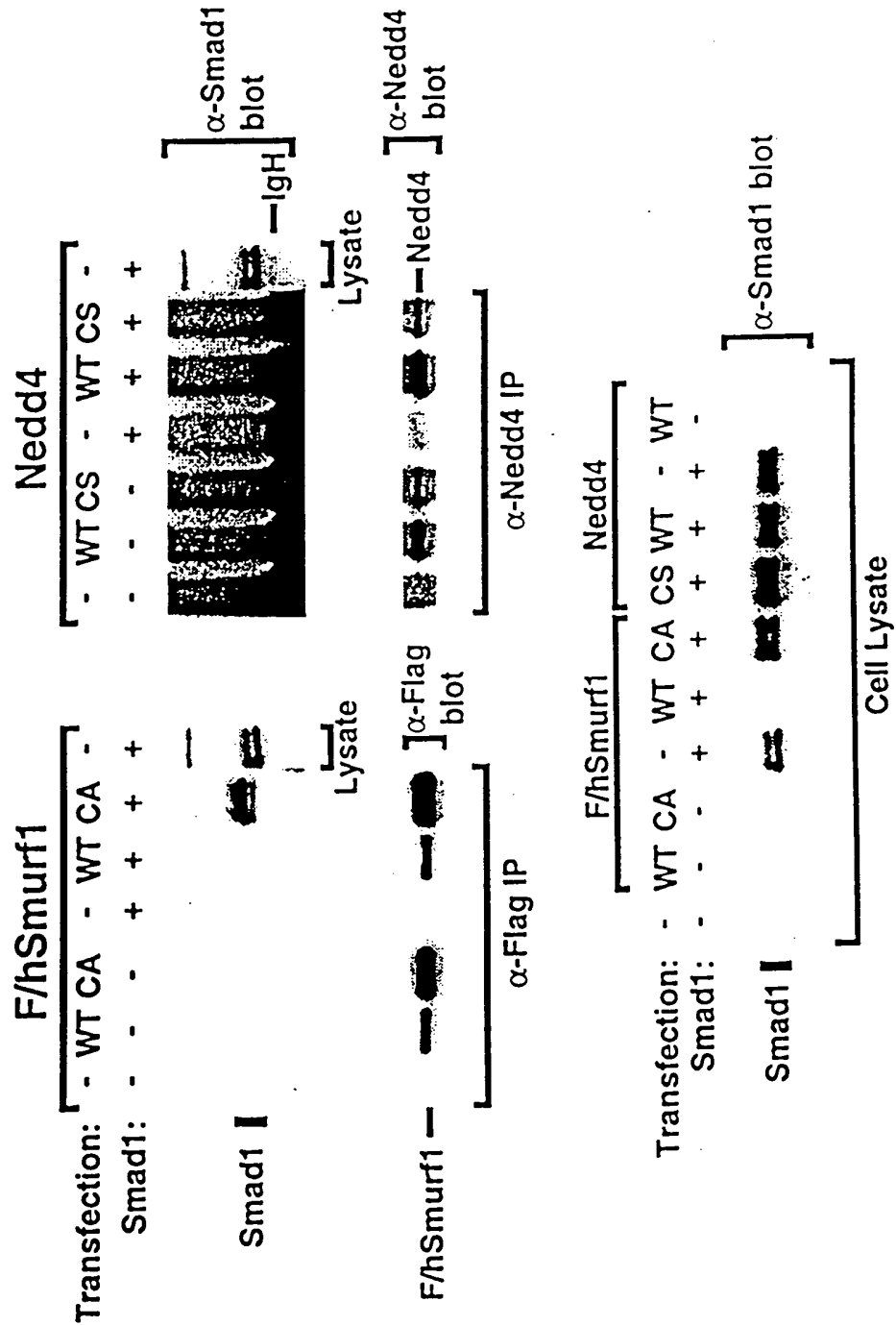
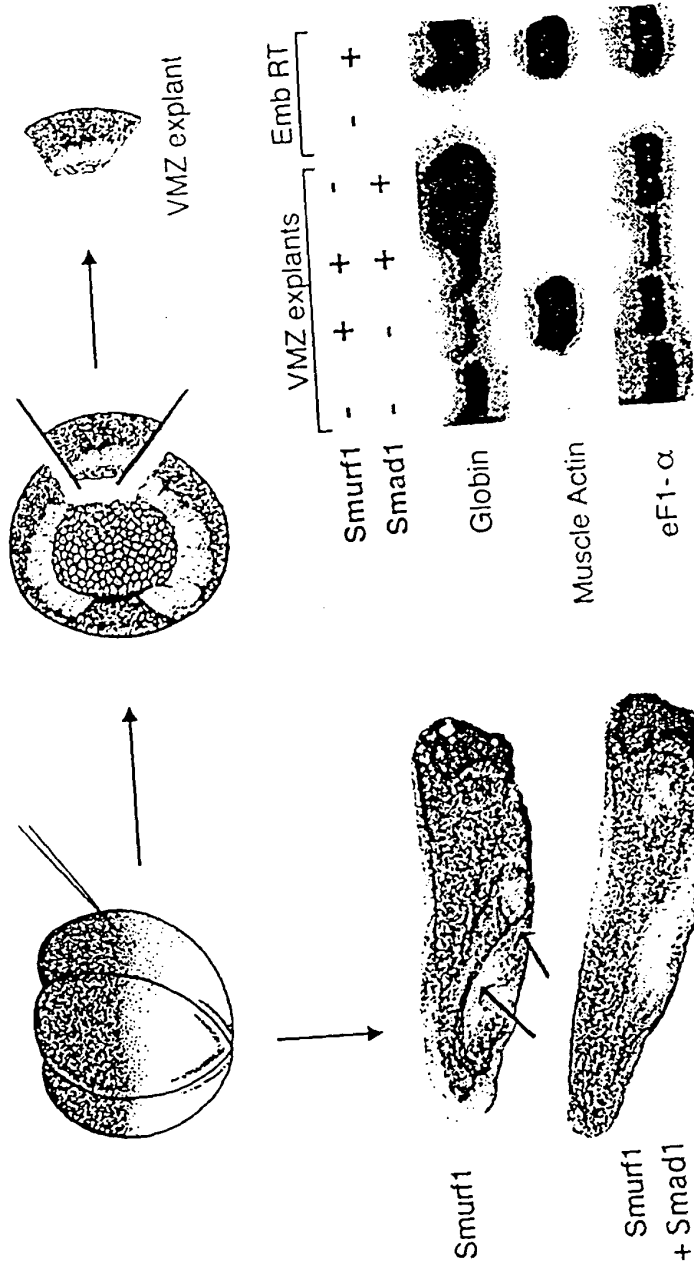


FIG. 6C



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FIG. 7A



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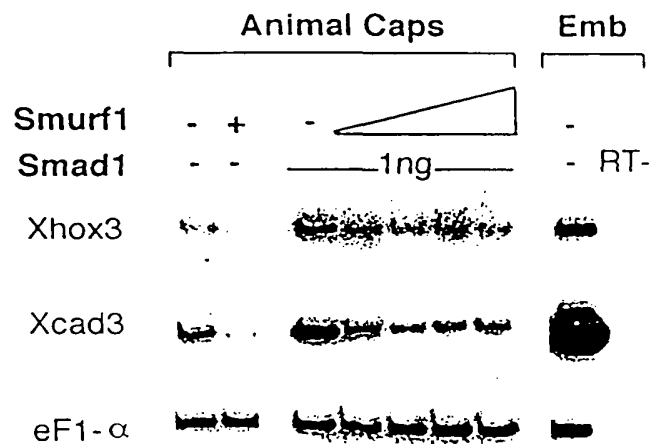


FIG. 8A

FIG. 8B

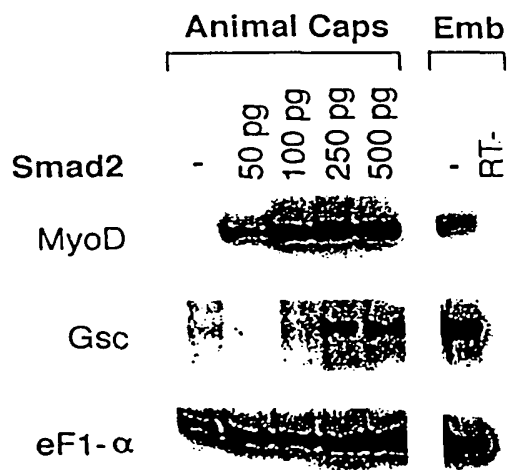
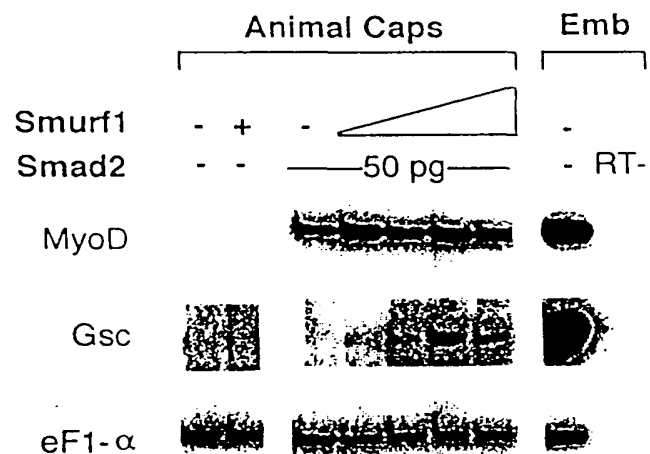


FIG. 8C

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FIG. 9A

10	20	30	40	50
*	*	*	*	*
GGAGGCTCCA	GCATCAAGAT	CCGTCTGACA	GTGTTATGTG	CCAAGAACCT
60	70	80	90	100
*	*	*	*	*
TGCAAAGAAA	GACTTCTTCA	GGCTCCCTGA	CCCTTTTGCA	AAGATTGTGCG
110	120	130	140	150
*	*	*	*	*
TGGATGGGTC	TGGGCAGTGC	CACTCAACCG	ACACTGTGAA	AAACACATTG
160	170	180	190	200
*	*	*	*	*
GACCCAAAGT	GGAACCAGCA	CTATGATCTA	TATGTTGGGA	AAACGGATTG
210	220	230	240	250
*	*	*	*	*
GATAACCATT	AGCGTGTGGA	ACCATAAGAA	AATTCACAAG	AAACAGGGAG
260	270	280	290	300
*	*	*	*	*
CTGGCTTCCT	GGGCTGTGTG	CGGCTGCTCT	CCAATGCCAT	CAGCAGATTA
310	320	330	340	350
*	*	*	*	*
AAAGATACCG	GATACCAGCG	TTTGGATCTA	TGCAAATAA	ACCCCTCAGA
360	370	380	390	400
*	*	*	*	*
TACTGATGCA	GTTCTGTGCC	AGATAGTGGT	CAGTTTACAG	ACACGAGACA

A-----A

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FIG. 9B

A ————— A

410	420	430	440	450
*	*	*	*	*
GAATAGGAAC	CGGCGGCTCG	GTGGTGGACT	GCAGAGGACT	GTTAGAAAAT
460	470	480	490	500
*	*	*	*	*
GAAGGAACGG	TGTATGAAGA	CTCCGGGCCT	GGGAGGCCGC	TCAGCTGCTT
510	520	530	540	550
*	*	*	*	*
CATGGAGGAA	CCAGCCCCTT	ACACAGATAG	CACCGGTGCT	GCTGCTGGAG
560	570	580	590	600
*	*	*	*	*
GAGGGAATTG	CAGGTTCGTG	GAGTCCCCAA	GTCAAGATCA	AAGACTTCAG
610	620	630	640	650
*	*	*	*	*
GCACAGCGGC	TTCGAAACCC	TGATGTGCGA	GGTTCACTAC	AGACGCCCCA
660	670	680	690	700
*	*	*	*	*
GAACCGACCA	CACGGCCACC	AGTCCCCGGA	ACTGCCCGAA	GGCTACGAAC
710	720	730	740	750

B ————— B

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FIG. 9C

B ————— B

 * * * * *

AAAGAACAAC AGTCCAGGGC CAAGTTTACT TTTTGCATAC ACAGACTGGA

 760 770 780 790 800

 * * * * *

GTTAGCACGT GGCACGACCC CAGGATACCA AGAGACCTTA ACAGTGTGAA

 810 820 830 840 850

 * * * * *

CTGTGATGAA CTTGGACCAC TGCCGCCAGG CTGGGAAGTC AGAAGTACAG

 860 870 880 890 900

 * * * * *

TTTCTGGGAG GATATATTTT GTAGATCATA ATAACCGAAC AACCCAGTTT

 910 920 930 940 950

 * * * * *

ACAGACCCAA GGTTACACCA CATCATGAAT CACCAGTGCC AACTCAAGGA

 960 970 980 990 1000

 * * * * *

GCCCAGCCAG CCGCTGCCAC TGCCCAGTGA GGGCTCTCTG GAGGACGAGG

 1010 1020 1030 1040 1050

 * * * * *

AGCTTCCTGC CCAGAGATAC GAAAGAGATC TAGTCCAGAA GCTGAAAGTC

 1060 1070 1080 1090 1100

 * * * * *

CTCAGACACG AACTGTCGCT TCAGCAGCCC CAAGCTGGTC ATTGCCGCAT

C ————— C

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FIG. 9D

C					C				
1110	1120	1130	1140	1150					
*	*	*	*	*					
CGAAGTGTCC	AGAGAAGAAA	TCTTTGAGGA	GTCTTACCGC	CAGATAATGA					
1160	1170	1180	1190	1200					
*	*	*	*	*					
AGATGCGACC	GAAAGACTTG	AAAAAACGGC	TGATGGTGAA	ATTCCGTGGG					
1210	1220	1230	1240	1250					
*	*	*	*	*					
GAAGAAGGTT	TGGATTACGG	TGGTGTGGCC	AGGGAGTGGC	TTTACTTGCT					
1260	1270	1280	1290	1300					
*	*	*	*	*					
GTGCCATGAA	ATGCTGAATC	CTTATTACGG	GCTCTTCCAG	TATTCTACGG					
1310	1320	1330	1340	1350					
*	*	*	*	*					
ACAATATTTA	CATGTTGCAA	ATAAATCCGG	ATTCTTCAAT	CAACCCCGAC					
1360	1370	1380	1390	1400					
*	*	*	*	*					
CACTTGTCTT	ATTTCCACTT	TGTGGGGCGG	ATCATGGGGC	TGGCTGTGTT					
1410	1420	1430	1440	1450					
*	*	*	*	*					
D					D				

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FIG. 9E

D-----D

CCATGGACAC TACATCAACG GGGGCTTCAC AGTGCCCTTC TACAAGCAGC

1460	1470	1480	1490	1500
*	*	*	*	*

TGCTGGGGAA GCCCATCCAG CTCTCAGATC TGGAATCTGT GGACCCAGAG

1510	1520	1530	1540	1550
*	*	*	*	*

CTGCATAAGA GCTTGGTGTG GATCCTAGAG AACGACATCA CGCCTGTACT

1560	1570	1580	1590	1600
*	*	*	*	*

GGACCACACC TTCTGCGTGG AACACAACGC CTTGCGGGCGG ATCCTGCAGC

1610	1620	1630	1640	1650
*	*	*	*	*

ATGAACTGAA ACCCAATGGC AGAAATGTGC CAGTCACAGA GGAGAATAAG

1660	1670	1680	1690	1700
*	*	*	*	*

AAAGAATACG TCCGGTTGTA TGTAAACTGG AGGTTTATGA GAGGAATCGA

1710	1720	1730	1740	1750
*	*	*	*	*

AGCCCAGTTC TTAGCTCTGC AGAAGGGGTT CAATGAGCTC ATCCCTCAAC

1760	1770	1780	1790	1800
*	*	*	*	*

ATCTGCTGAA GCCTTTTGAC CAGAAGGAAC TGGAGCTGAT CATAGGCGGC

E-----E

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FIG. 9F

E ————— E

1810	1820	1830	1840	1850
*	*	*	*	*
CTGGATAAAA	TAGACTTGAA	CGACTGGAAG	TCGAACACGC	GGCTGAAGCA
1860	1870	1880	1890	1900
*	*	*	*	*
CTGTGTGGCC	GACAGCAACA	TCGTGCGGTG	GTTCTGGCAA	GCGGTGGAGA
1910	1920	1930	1940	1950
*	*	*	*	*
CGTTCGATGA	AGAAAGGAGG	GCCAGGCTCC	TGCAGTTTGT	GACTGGGTCC
1960	1970	1980	1990	2000
*	*	*	*	*
ACGCGAGTCC	CGCTCCAAGG	CTTCAAGGCT	TTGCAAGGTT	CTACAGGCGC
2010	2020	2030	2040	2050
*	*	*	*	*
GGCAGGGCCC	CGGCTGTTCA	CCATCCACCT	GATAGACGCG	AACACAGACA
2060	2070	2080	2090	2100
*	*	*	*	*
ACCTTCCGAA	GGCCCATACC	TGCTTTAACC	GGATCGACAT	TCCACCATAT
2110	2120	2130	2140	2150
*	*	*	*	*
GAGTCCTATG	AGAAGCTCTA	CGAGAAGCTG	CTGACAGCCG	TGGAGGAGAC
2160	2170			
*	*			
CTGCGGGTTT	GCTGTGGAGT	AA		

FIG. 10B

A ——— A

260 * 270 * 280 * 290 * 300 *
VSTWHDPRIP RDLNSVNCDE LGPLPPGWEV RSTVSGRIYF VDHNNRTTQF

310 * 320 * 330 * 340 * 350 *
TDPRLHHIMN HQCOLKEPSQ PLPLPSEGL EDEELPAQRY ERDLVQKLKV

360 * 370 * 380 * 390 * 400 *
LRHELSQLQP QAGHCRIEVS REEIFEESYR QIMKMRPKDL KKRLMVKFRG

410 * 420 * 430 * 440 * 450 *
EEGLDYGGVA REWLYLLCHE MLNPYYGLFQ YSTDNIYMLQ INPDSSINPD

460 * 470 * 480 * 490 * 500 *
HLSYFHFVGR IMGLAVFHGH YINGGFTVPF YKQLLGKPIQ LSDLESVDPE

B ——— B

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FIG. 10C

B ———— B

510 520 530 540 550
* * * * *
LHKSLVWILE NDITPVL DHT FCVEHNAFGR ILQHELKPNG RNVPTVEENK

560 570 580 590 600
* * * * *
KEYVRLVNW RFMRGIEAQF LALQKGFNEL IPQHLLKPPD QKELELIIGG

610 620 630 640 650
* * * * *
LDKIDLNDWK SNTRLKHCVA DSNIVRWFQ AVETFDEERR ARLLQFVTGS

660 670 680 690 700
* * * * *
TRVPLQGFKALQGSTGAAGP RLFTIHLIDA NTDNLPKAHT CFNRIDIPPY

710 720
* *
ESYEKLYEKL LTAVEETCGF AVE*

FIG. IIA

10	20	30	40	50
*	*	*	*	*
ATGTCTAACC	CCGGACGCCG	GAGGAACGGG	CCCGTCAAGC	TGCGCCTGAC
60	70	80	90	100
*	*	*	*	*
AGTACTCTGT	GCAAAAAACC	TGGTGAAAAA	GGATTTTTC	CGACTTCCTG
110	120	130	140	150
*	*	*	*	*
ATCCATTTC	TAAGGTGGTG	GTTGATGGAT	CTGGGCAATG	CCATTCTACA
160	170	180	190	200
*	*	*	*	*
GATACTGTGA	AGAATACGCT	TGATCCAAAG	TGGAATCAGC	ATTATGACCT
210	220	230	240	250
*	*	*	*	*
GTATATTGGA	AAGTCTGATT	CAGTTACGAT	CAGTGTATGG	AATCACAAGA
260	270	280	290	300
*	*	*	*	*
AGATCCATAA	GAAACAAGGT	GCTGGATTTC	TCGGTTGTGT	TCGTCTTCTT
A-----A				

FIG. 11B

A									
310	*	320	*	330	*	340	*	350	*
TCCAATGCCA		TCAACCGCCT		CAAAGACACT		GGTTATCAGA		GGTTGGATT	
360	*	370	*	380	*	390	*	400	*
ATGCAAACTC		GGGCCAAATG		ACAATGATAC		AGTTAGAGGA		CAGATAGTAG	
410	*	420	*	430	*	440	*	450	*
TAAGTCTTCA		GTCCAGAGAC		CGAATAGGCA		CAGGAGGACA		AGTTGTGGAC	
460	*	470	*	480	*	490	*	500	*
TGCAGTCGTT		TATTTGATAA		CGATTACCA		GACGGCTGGG		AAGAAAGGAG	
510	*	520	*	530	*	540	*	550	*
AACCGCCTCT		GGAAGAATCC		AGTATCTAAA		CCATATAACA		AGAACTACGC	
560	*	570	*	580	*	590	*	600	*
AATGGGAGCG		CCCAACACGA		CCGGCATCCG		AATATTCTAG		CCCTGGCAGA	
B									

FIG. 11C

B									
610	*	620	*	630	*	640	*	650	*
CCTCTTAGCT GCTTTGTTGA TGAGAACACT CCAATTAGTG GAACAAATGG									
660	*	670	*	680	*	690	*	700	*
TGCAACATGT GGACAGTCTT CAGATCCCCAG GCTGGCAGAG AGGAGAGTCA									
710	*	720	*	730	*	740	*	750	*
GGTCACAACG ACATAGAAAT TACATGAGCA GAACACATTT ACATACTCCT									
760	*	770	*	780	*	790	*	800	*
CCAGACCTAC CAGAAGGCTA TGAACAGAGG ACAACGCAAC AAGGCCAGGT									
810	*	820	*	830	*	840	*	850	*
GTATTCTTA CATAACACAGA CTGGTGTGAG CACATGGCAT GATCCAAGAG									
860	*	870	*	880	*	890	*	900	*
TGCCCCAGGA TCTTAGCAAC ATCAATTGTG AAGAGCTTGG. TCCATTGCCT									
C									

FIG. IID

C										C
910	*	920	*	930	*	940	*	950	*	
CCTGGATGGG	AGATCCGTAA	TACGGCAACA	GGCAGAGTTT	ATTTCGTTGA						
960	*	970	*	980	*	990	*	1000	*	
CCATAACAAC	AGAACAAAC	AATTACAGA	TCCTCGGCTG	TCTGCTAACT						
1010	*	1020	*	1030	*	1040	*	1050	*	
TGCATTAGT	TTTAAATCGG	CAGAACCAAT	TGAAAGACCA	ACAGCAACAG						
1060	*	1070	*	1080	*	1090	*	1100	*	
CAAGTGGTAT	CGTTATGTCC	TGATGACACA	GAATGCCTGA	CAGTCCCAAG						
1110	*	1120	*	1130	*	1140	*	1150	*	
GTACAAGCGA	GACCTGGTTC	AGAAACTAAA	AATTTCGGG	CAAGAACTTT						
1160	*	1170	*	1180	*	1190	*	1200	*	
CCCAACAACA	GCCTCAGGCA	GGTCATTGCC	GCATTGAGGT	TTCCAGGGAA						
D										D

FIG. 11F

E		F	
GCAGATCAAT	CCTGATTCTG	CAGTTAATCC	GGAACATTTA TCCTATTTC
1460 *	1470 *	1480 *	1490 * 1500 *
ACTTTGTTGG	ACGAATAATG	GGAATGGCTG	TGTTTCATGG ACATTATATT
1510 *	1520 *	1530 *	1540 * 1550 *
GATGGTGGTT	TCACATTGCC	TTTTTATAAG	CAATTGCTTG GGAAGTCAAT
1560 *	1570 *	1580 *	1590 * 1600 *
TACCTTGGAT	GACATGGAGT	TAGTAGATCC	GGATCTTCAC AACAGTTTAG
1610 *	1620 *	1630 *	1640 * 1650 *
TGTGGATACT	TGAGAAATGAT	ATTACAGGTG	TTTTTGGACCA TACCTTCTGT
1660 *	1670 *	1680 *	1690 * 1700 *
GTTGAACATA	ATGCATATGG	TGAAATTATT	CAGCATGAAC TTAAACCAAAA
1710 *	1720 *	1730 *	1740 * 1750 *
TGGCAAAAGT	ATCCCTTGTTA	ATGAAGAAAA	TAAAAAAGAA TATGTCAGGC
F		F	

FIG. 11G

F									
1760	*	1770	*	1780	*	1790	*	1800	*
TCTATGTGAA	CTGGAGATT	TTACGAGGCA	TTGAGGCTCA	ATTCTTGGCT					
1810	*	1820	*	1830	*	1840	*	1850	*
CTGCAGAAAG	GATTTAATGA	AGTAATTCCA	CAACATCTGC	TGAAGACATT					
1860	*	1870	*	1880	*	1890	*	1900	*
TGATGAGAAG	GAGTTAGAGC	TCATTATTGG	TGGACTTGGG	AAGATAGATG					
1910	*	1920	*	1930	*	1940	*	1950	*
TTAATGACTG	GAAGGTAAC	ACCCGGTTAA	AACACTGTAC	ACCAGACAGC					
1960	*	1970	*	1980	*	1990	*	2000	*
AACATTGTCA	AATGGTTCTG	GAAAGCTGTG	GAGTTTTTTG	ATGAAGAGCG					
2010	*	2020	*	2030	*	2040	*	2050	*
ACGAGCAAGA	TTGCTTCAGT	TTGTGACAGG	ATCCCTCTCGA	GTGCCCTCTGC					
G									

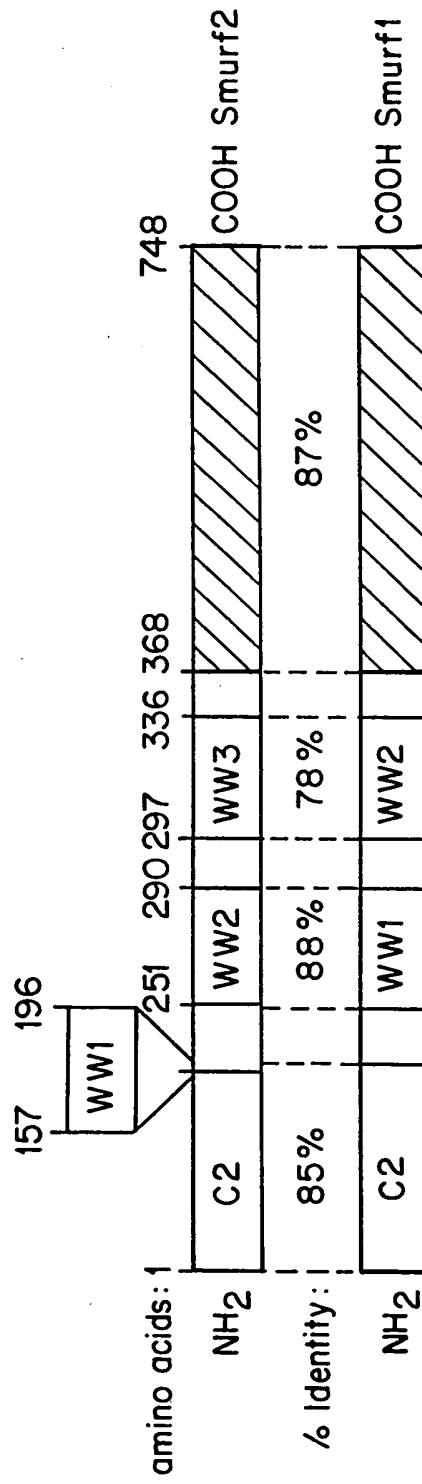
FIG. 11

G		G		G		G	
2060	2070	2080	2090	2100			
AGGGCTTCAA	AGCATTTGCAA	GGTGCTGCAG	GCCCGAGACT	CTTTACCATA			
2110	2120	2130	2140	2150			
CACCAGATTG	ATGCCTGCAC	TAACAACCTG	CCGAAAGCCC	ACACTTGCTT			
2160	2170	2180	2190	2200			
CAATCGAATA	GACATTCCAC	CCTATGAAAG	CTATGAAAAG	CTATATGAAA			
2210	2220	2230	2240				
AGCTGCTAAC	AGCCATTGAA	GAAACATGTG	GATTGCTGT	GGAATGA			

FIG. 12

MSNPGRRNGPVKRLTLVLCAKNLVKKDFRLLPDPFAKVVDGSGQCHS 49
 TDTVKNTLDPKWNQHYDLYIGKSDSVTISVWNHKKIHKKQGAGFLGCVR 98
 LLSNAINRLKDTGYQRLLDLCKLGPNDNDTVRGQIVVSLQSRDRIGTGGQ 147
 VVDCSRLFDNDLPGWEEERRTASGRIOYENHETRIQWERTRPASEYS 196
 SPGRPLSCFVDENTPISGTNGATCGQSSDPRLAERRVRSQRHRNYSRST 245
 HLHTPPDLPEGYERNTQQGGVYELHQQGVSTWHDPRVPRDLSNINCE 294
 ELGPLPPGWEERNATGRVYFVDENNRTIGEITDPRLSANLHLVLRNQ 343
 LKDQQQQVVSLCPDDTECLTVPRYKRDLVQKLILRQELSQQPQAGH 392
 CRIEVSREEIFFEESYRQVMKMRPKDLWKRLMIKFRGEEGLDYGGVAREW 441
 LYLSSHMLNPYYGLFQYSRDDIYTLQINPDSAVNPEHLSYFHFVGRIM 490
 GMAVFHGHYIDGGFTLPFYKQLLGKSTITLDDMELVDPDLHNSLVWILEN 539
 DITGVLDHTFCVEHNAYGEIIQHELKPNKGSIPVNEENKKEYVRLYVNW 588
 RFLRGIEAQFLALQKGFNEVIPQHLKTFDEKELELIICGLGKIDVNDW 637
 KVNTRLKHCTPPDSNIVKWFWKAVEFFDEERRARLLQFVTGSSRVPLQGF 686
 KALQGAAGPRLFTIHQIDACTNNLPKAHTCFNRIDIPPPYESYEKLYEKL 735
 LTAIEETCGFAVE 748

FIG. 13



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FIG. 14A

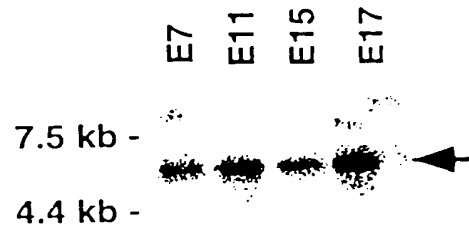
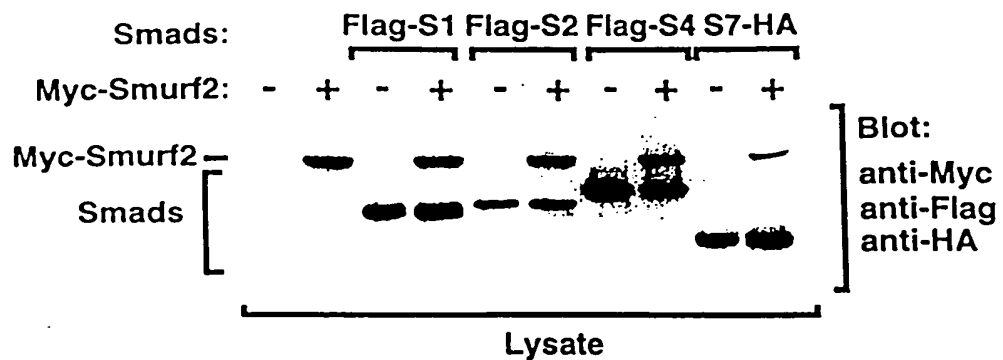


FIG. 14B



FIG. 15A



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FIG. 15B

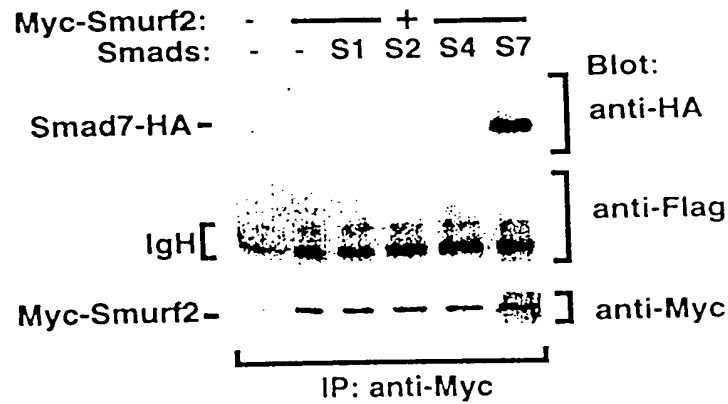
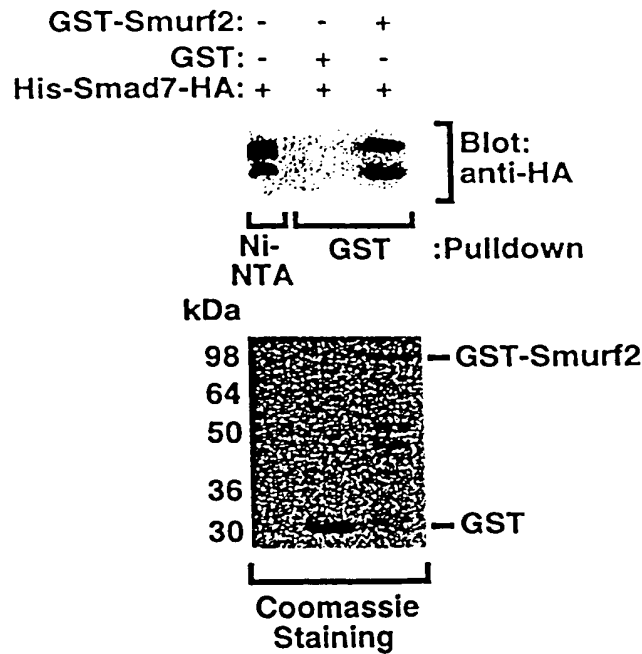
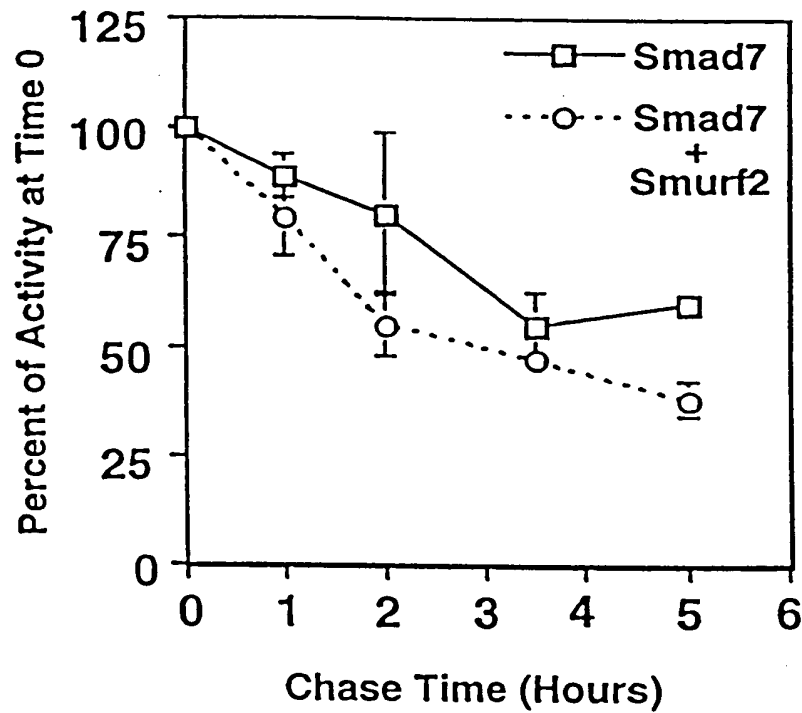
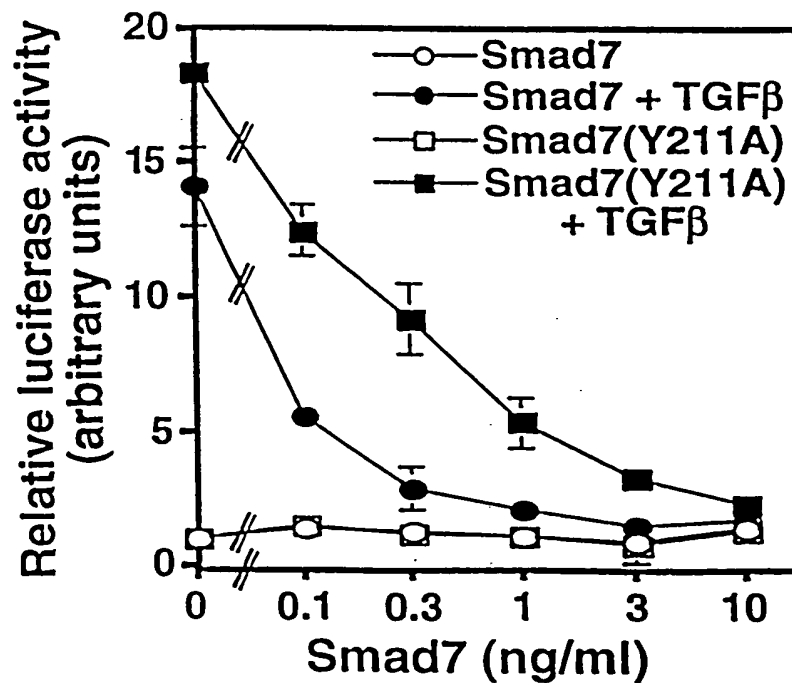


FIG. 15D



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FIG. 15C**FIG. 18C**

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FIG. 15E

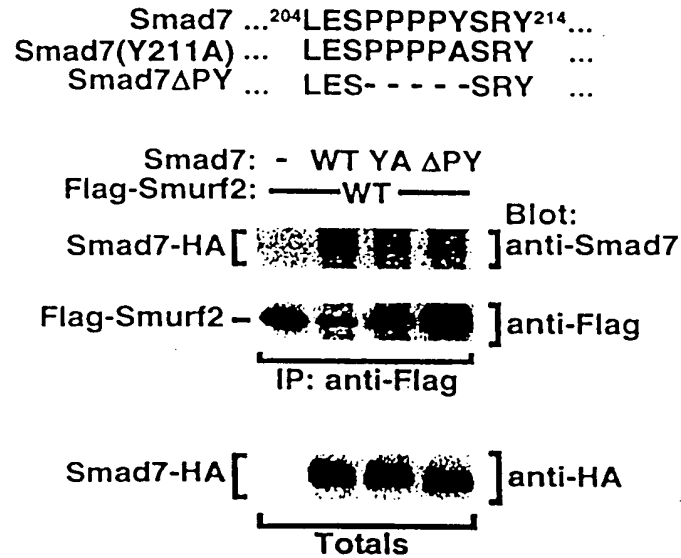
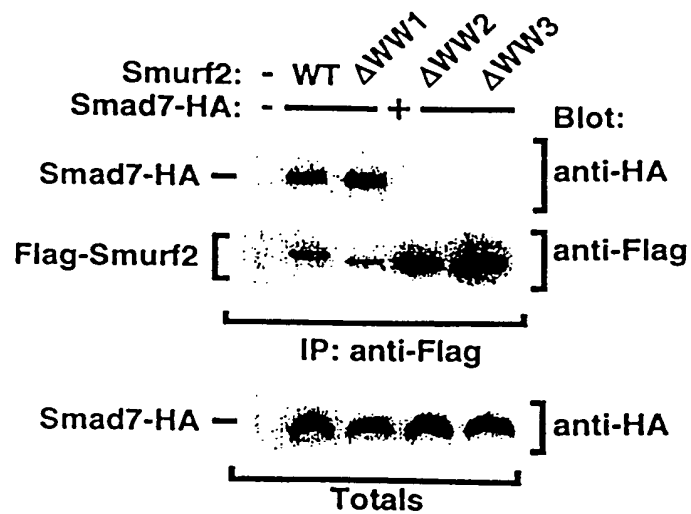
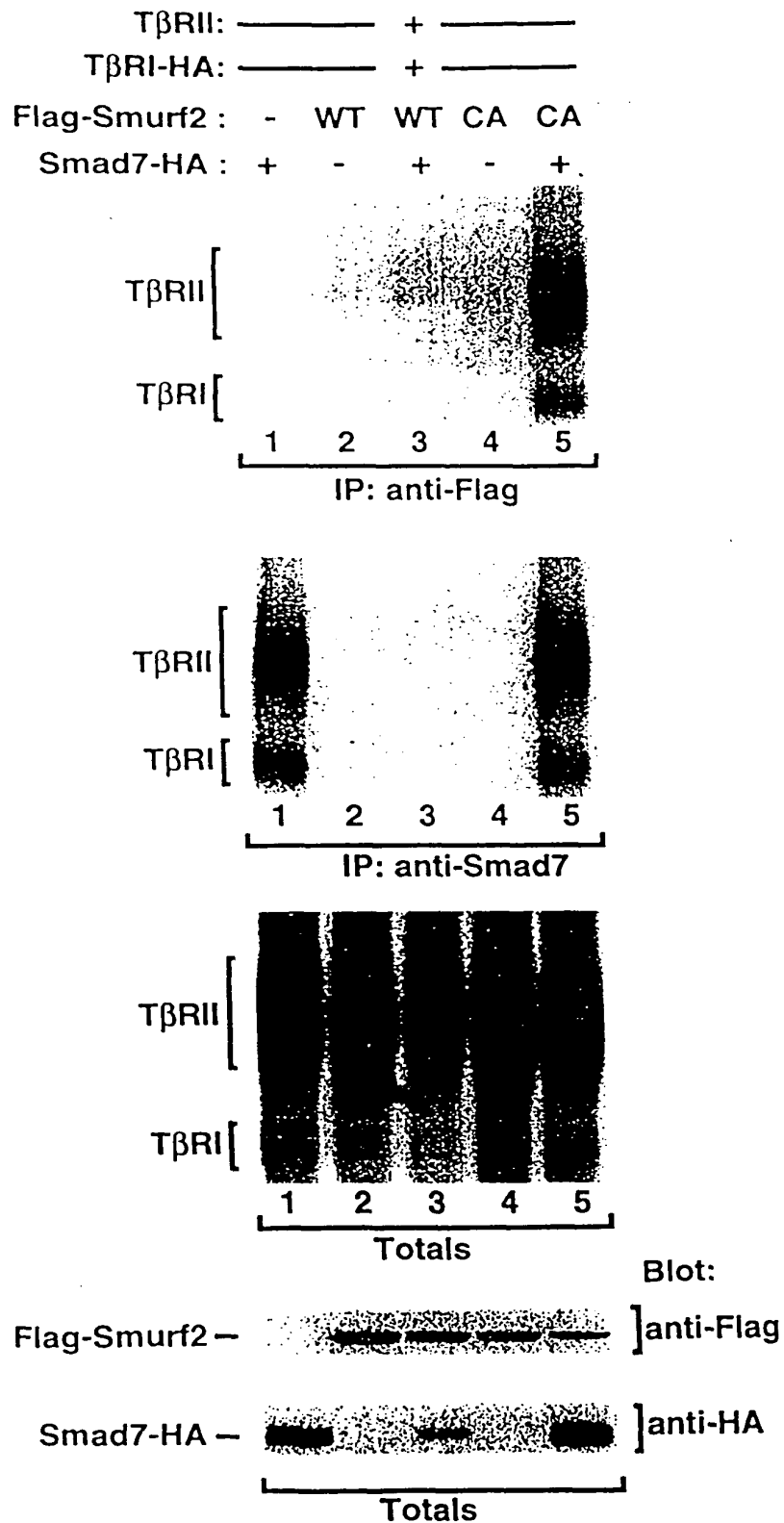


FIG. 15F



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FIG. 16A



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FIG. 16 B

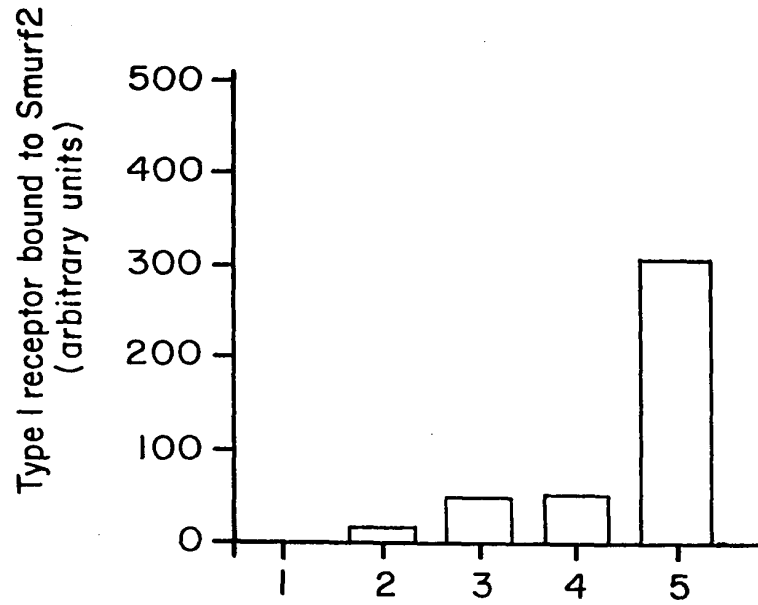
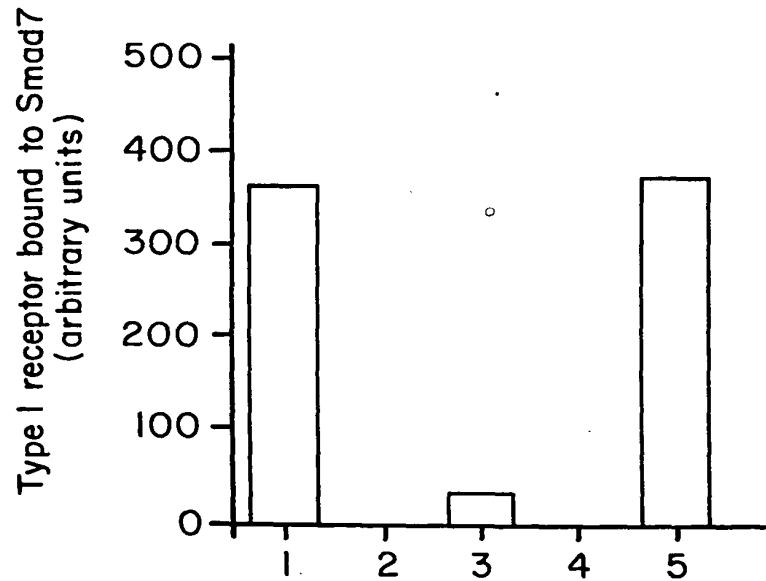


FIG. 16 C



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FIG. 17A

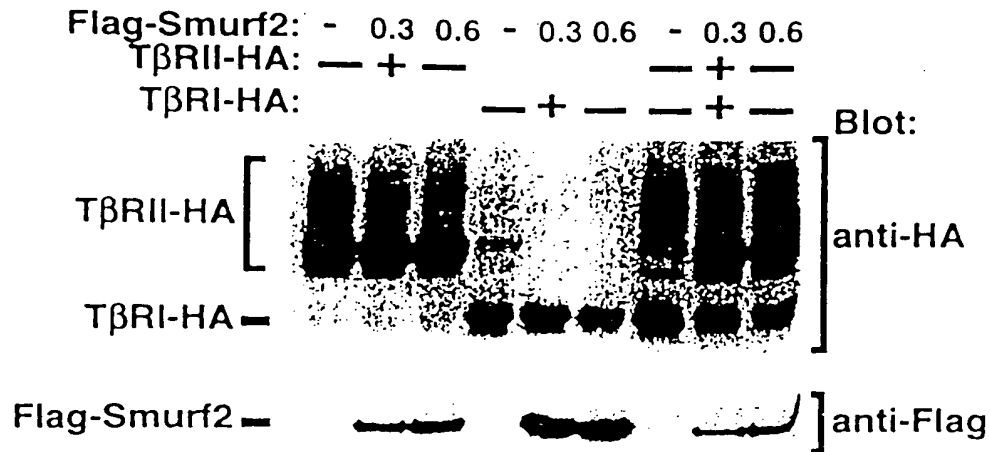
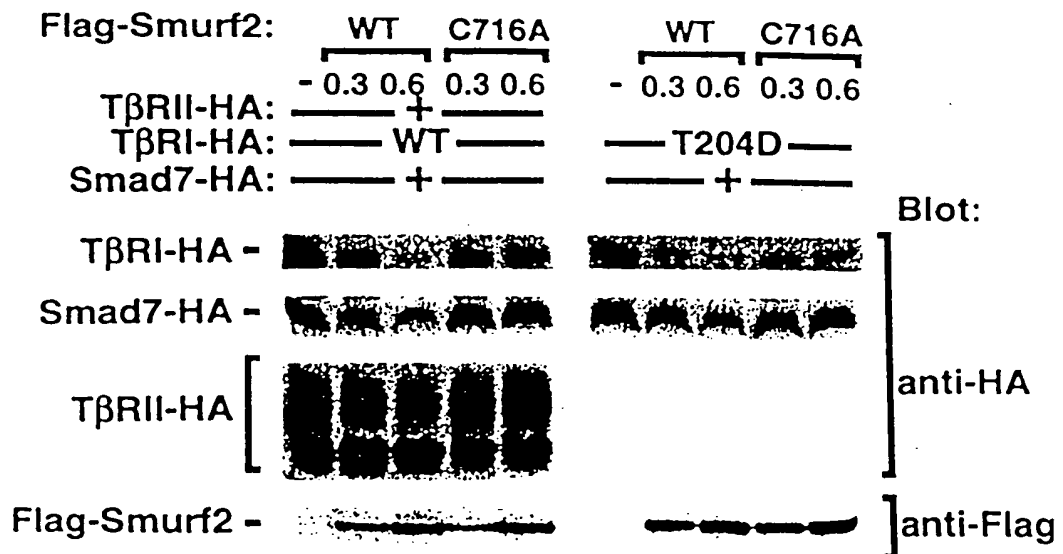


FIG. 17B



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FIG. 17C

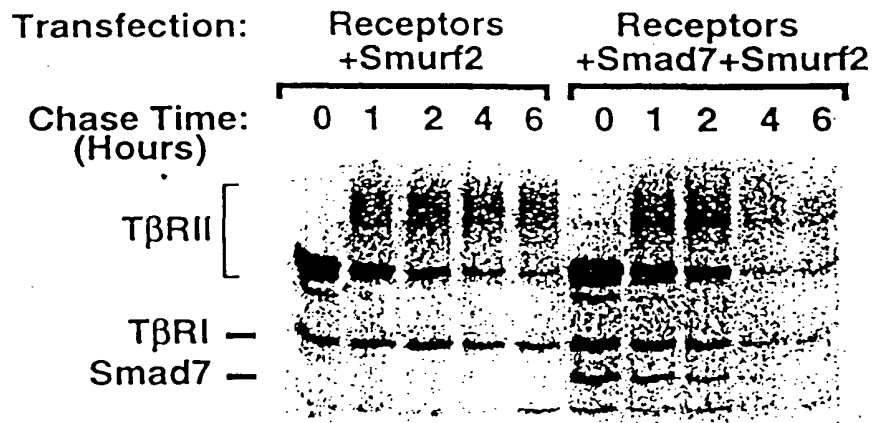
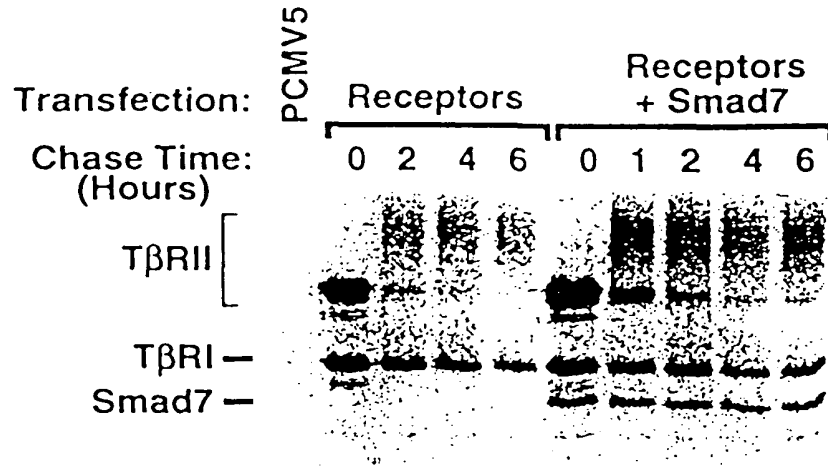
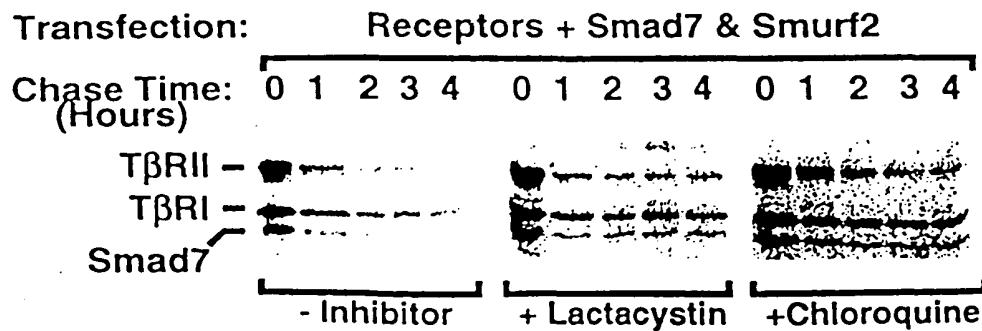


FIG. 17D



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FIG. 17C1

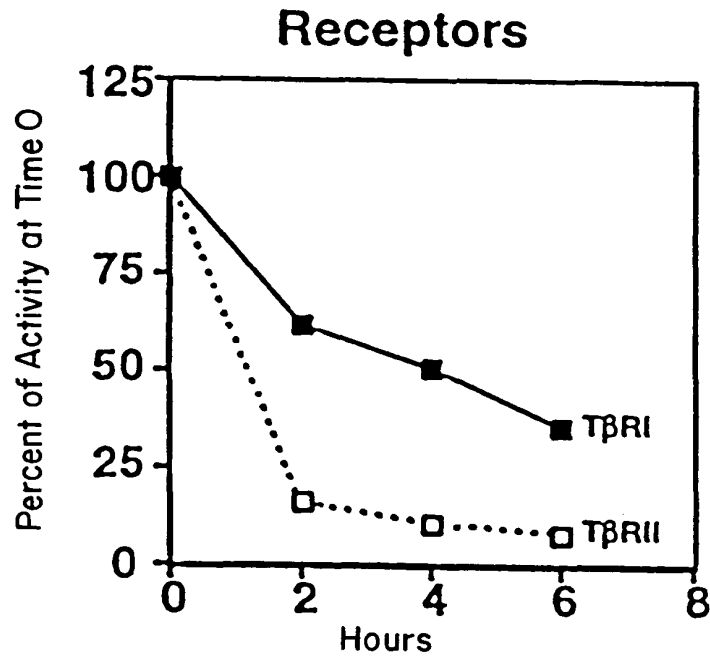
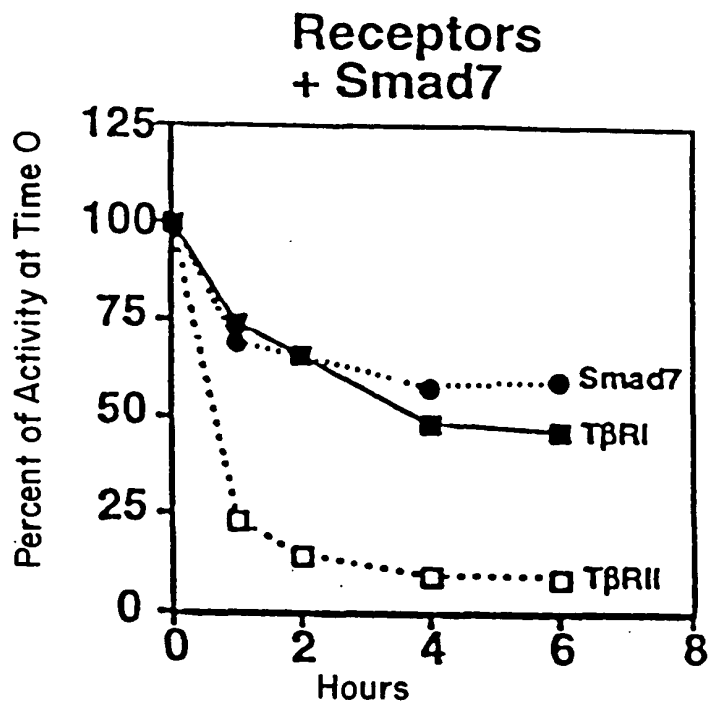


FIG. 17C2



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FIG. 17C3

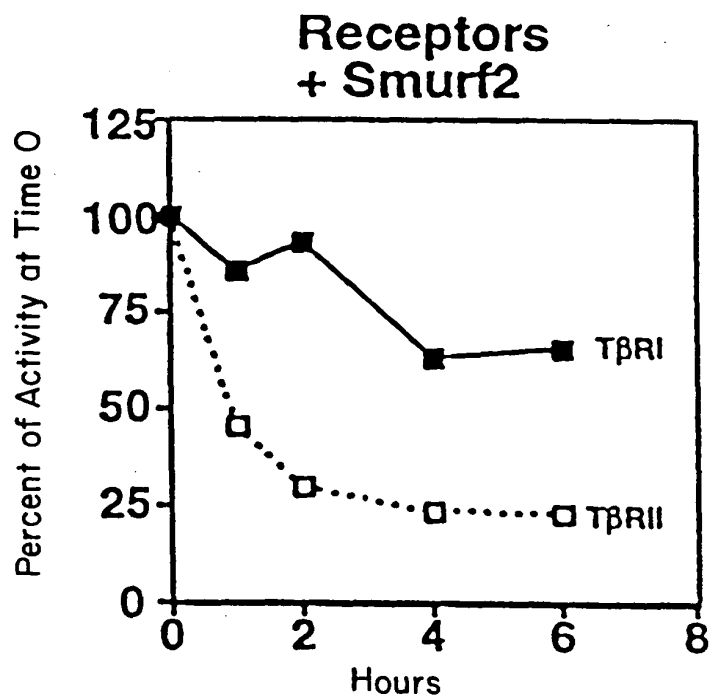
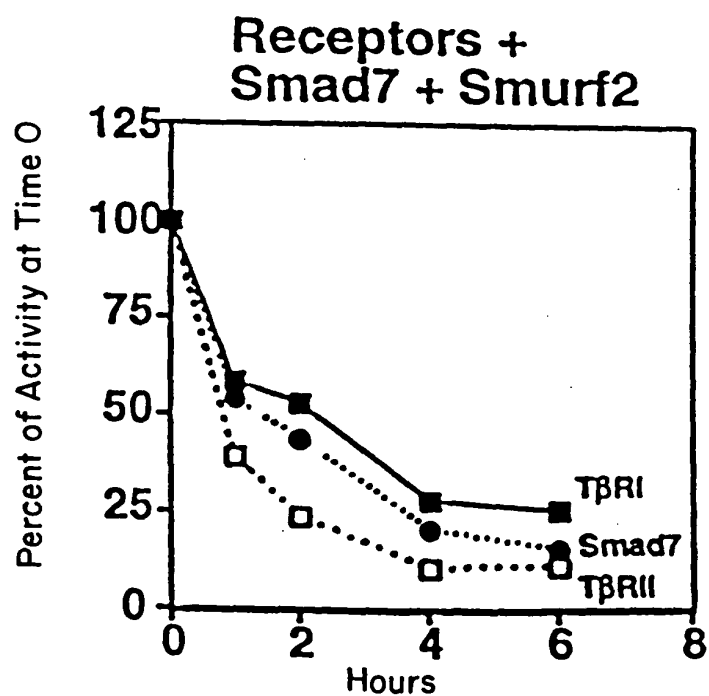


FIG. 17C4



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FIG. 17E

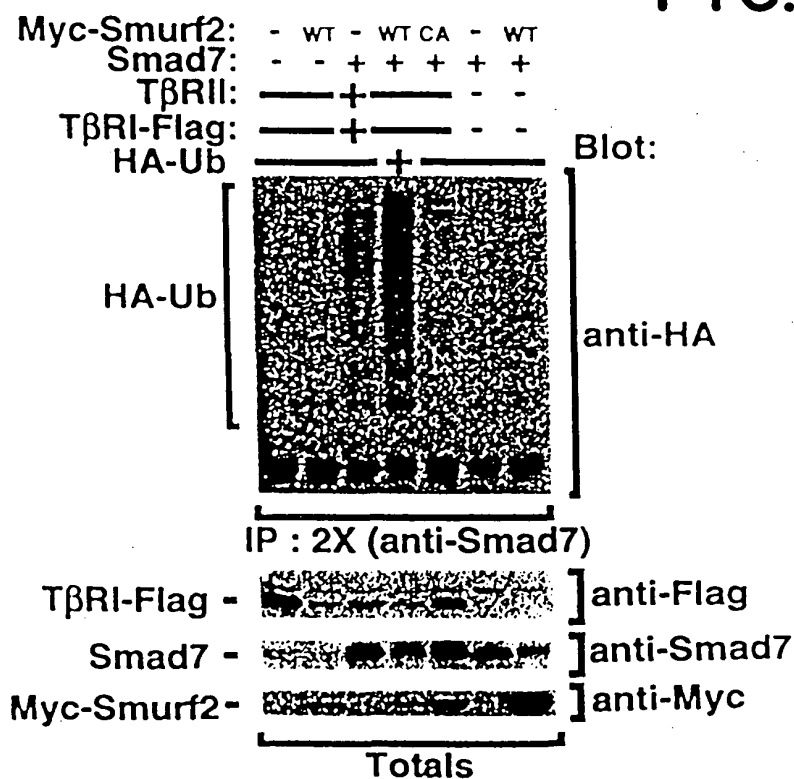
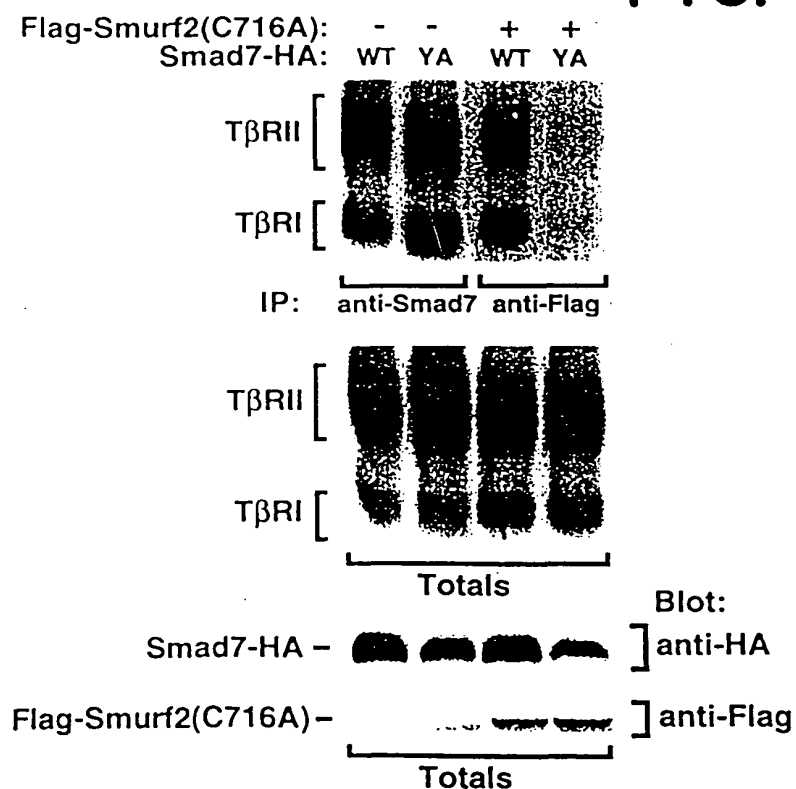
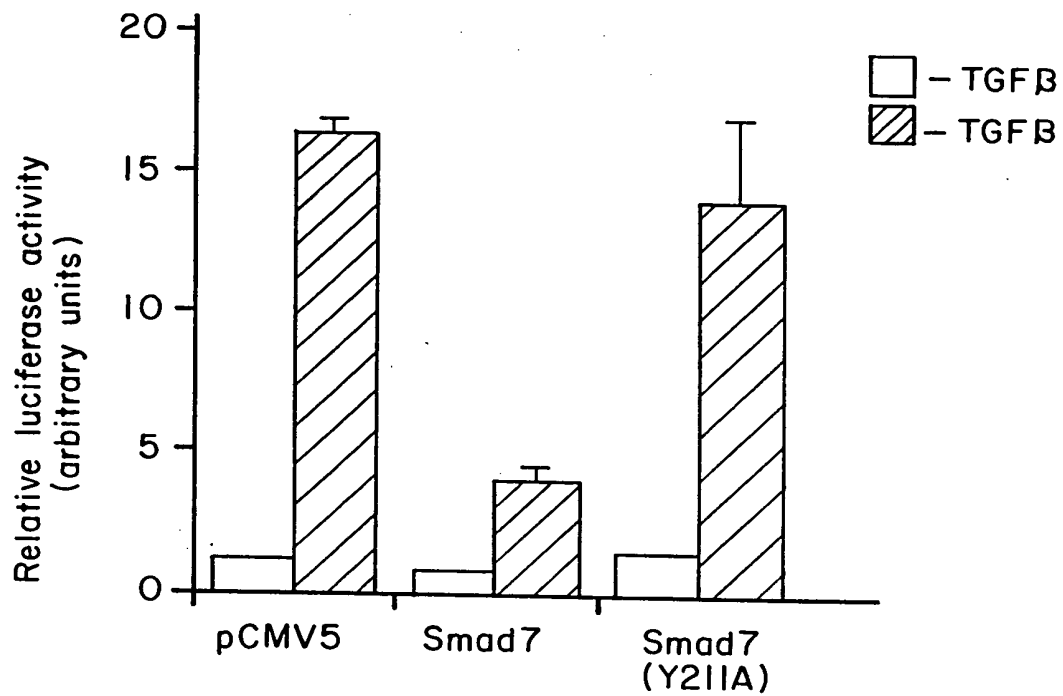


FIG. 18A



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FIG. 18B**FIG. 18D**